

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL
PROBLEM MEANS OPERATION EXAMPLE DESCRIPTION OF DRAWINGS DRAWINGS

[Translation done.]

* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] The medical fluid washing method of the film in the dipping former membrane filtration equipment characterized by pouring and washing the medical fluid for washing from the treated-water side of this film to a raw water side on the aforementioned film after draining the raw water in the aforementioned immersing tub and exposing the aforementioned film into the atmosphere in the medical fluid washing method of the film immersed in the immersing tub in which raw water was stored.

[Claim 2] The medical fluid washing method of the film in the dipping former membrane filtration equipment characterized by moving a film upwards from the raw water in the aforementioned immersing tub, exposing a film into the atmosphere in the medical fluid washing method of the film immersed in the immersing tub in which raw water was stored, and pouring and washing the medical fluid for washing from the treated-water side of this film to a raw water side on the aforementioned film the back.

[Claim 3] The washing method of the film in the dipping former membrane filtration equipment according to claim 1 or 2 characterized by switching the medical fluid to supply a little in washing of the aforementioned film after making the medical fluid for washing permeate a film.

[Claim 4] The medical fluid washing station of the film in the dipping former membrane-filtration equipment characterized by to have a medical fluid supply means establishes a drainage means drain the raw water in this immersing tub to the aforementioned immersing tub, and expose the aforementioned film into the atmosphere in the dipping former membrane-filtration equipment which filters raw water with the film immersed in the immersing tub, and supply the medical fluid for washing to the aforementioned film from the treated-water side of this film.

[Claim 5] The medical fluid washing station of the film in the dipping former membrane-filtration equipment characterized by to have a medical fluid supply means establishes a move means move the aforementioned film from the raw water in the aforementioned immersing tub, and expose this film into the atmosphere in the dipping former membrane-filtration equipment which filters raw water with the film immersed in the immersing tub, and supply the medical fluid for washing to the aforementioned film from the treated-water side of this film.

[Claim 6] The medical fluid washing station of the film in the dipping former membrane filtration equipment according to claim 4 or 5 characterized by the bird clapper from an abundant medical fluid supply means by which the aforementioned medical fluid supply means supplies a lot of medical fluids for washing, and a little medical fluid supply means to supply a small amount of medical fluid for washing.

[Translation done.]

*-NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] this invention relates to the dipping former membrane filtration equipment which filters raw water with the film immersed in the immersing tub, and relates to the membranous medical fluid washing method and membranous medical fluid washing station which wash the film in the immersing tub with a medical fluid.

[0002]

[Description of the Prior Art] Conventionally, there is membrane filtration equipment of the dipping former which is immersed in a film (it is also called a membrane module) in the immersing tub in which raw water was stored, and purifies raw water in a filtration operation of a film. If fixed time use is carried out, it is made to wash a film in this membrane filtration equipment, since blinding will arise on a film by the suspended matter etc. and a filtration efficiency will fall, if membrane filtration is continued.

[0003] Reverse washing which a treated water is made to flow backwards to a raw water side, and washes it from a membranous treated-water side as this washing method is performed, or there are some which wash a membranous front face with the foam from the air jet hole which the film in an immersing tub prepared caudad.

[0004] Furthermore, if it is used during a fixed period, since a suspended matter etc. will enter to the interior of a film and the effect by the above-mentioned washing will fall remarkably, a film will be washed using the medical fluid for washing. In this case, you made it move towards the medical fluid washing tub in which the film was removed from equipment and the medical fluid for washing was stored, you made it immersed in this medical fluid washing tub, and membranous medical fluid washing was performed.

[0005]

[Problem(s) to be Solved by the Invention] However, there are the following troubles in the conventional medical fluid washing. Since remove a film from membrane filtration equipment, it is made to move towards a medical fluid washing tub and it is immersed in a medical fluid washing tub, the facility for movement of films, such as a crane, and removal and installation is needed. Moreover, since removal / installation work takes time, the rate of movable of membrane filtration equipment falls. Furthermore, since it is immersed in a medical fluid washing tub and a film is washed, the medical fluid for washing is needed for a large quantity and serves as cost quantity.

[0006] this invention is to offer the membranous medical fluid washing method and membranous medical fluid washing station which can wash with a small amount of medical fluid while it was made in view of the above-mentioned trouble and can shorten washing time.

[0007]

[Means for Solving the Problem] this invention was constituted as follows in order to solve the above-mentioned technical problem. In the medical fluid washing method of the film immersed in the immersing tub in which raw water was stored, after draining the raw water in the aforementioned immersing tub and exposing the aforementioned film into the atmosphere, it is considered as the medical fluid washing method of the film which pours and washes the medical fluid for washing from the treated water side of this film to a raw water side on the aforementioned film. Moreover, in the medical fluid washing method of the film immersed in the immersing tub in which raw water was stored, a film may be moved upwards from the raw water in the aforementioned immersing tub, a film may be exposed into the atmosphere, and you may be the medical fluid washing method of the film which pours and washes the medical fluid for washing from the treated-water side of this film to a raw water side on the aforementioned film the back. In these washing, after making the medical fluid for washing permeate a film, the medical fluid to supply may be switched a little and you may pass to a raw water side.

[0008] Moreover, in the dipping former membrane filtration equipment which filters raw water with the film immersed in the immersing tub, a drainage means to have drained the raw water in this immersing tub to the aforementioned immersing tub, and to have exposed the aforementioned film into the atmosphere was established, and it is considered as the medical fluid washing station of the film characterized by having a medical fluid supply means to supply the medical fluid for washing to the aforementioned film from the treated-water side of this film. Moreover, it sets to the dipping former membrane filtration equipment which filters raw water with the film immersed in the immersing tub. A move means to move the aforementioned film from the raw water in the aforementioned immersing tub, and to expose this film into the atmosphere is established. Each aforementioned medical fluid supply means which may be the medical fluid washing station of the film characterized by equipping the aforementioned film with a medical fluid supply means to supply the medical fluid for washing from the treated-water side of this film. It is good to constitute

from an abundant medical fluid supply means to supply a lot of medical fluids for washing, and a little medical fluid supply means supply a small amount of medical fluid for washing.

[0009]

[Function] According to this invention, it acts as follows. The medical fluid for washing is supplied to a film by the medical fluid supply means from a membranous treated-water side, and a medical fluid permeates a film. A film will be washed by this. Under the present circumstances, since the film is exposed into the atmosphere out of raw water, compared with the case where a film is washed, a membranous cleaning effect can be heightened by the same method in the state where the film was immersed into raw water. Furthermore, in the thing equipped with the abundant medical fluid supply means and the little medical fluid supply means, after a medical fluid permeates a film, the medical fluid to supply is switched a little, and it passes and washes to a raw water side. A cleaning effect can be raised while being able to press down by this the medical fluid which flows into a raw water side a little.

[0010]

[Example] Hereafter, the example of this invention is explained based on a drawing. The dipping former membrane filtration equipment 2 with which the medical fluid washing station 1 of one example of this invention was attached to drawing 1 is shown.

[0011] The aforementioned dipping former membrane filtration equipment 2 is equipped with the immersing tub 3 in which raw water is stored, and the membrane module 4 immersed into the raw water in this immersing tub 3, and outline composition is carried out. This membrane module 4 accumulates many hollow fibers (it is hereafter described as a film). The aforementioned film 4a has opened the inside of the inside for free passage at both ends while connecting both ends, respectively. Raw water penetrates this film inside membranous (treated-water side) from a membranous outside (raw water side), and it serves as a permeate (treated water).

[0012] Piping 5 and 6 is connected to the both ends of the aforementioned membrane module 4, respectively, the opening-and-closing valve V1 is infixed in one piping 6, and the opening-and-closing valve V2 is infixed in the piping 5 of another side. The treated-water tank 7 is connected to the aforementioned piping 6. The pump 8 is connected to the nose-of-cam side rather than the aforementioned opening-and-closing valve V2. Moreover, this pump 8 and the aforementioned treated-water tank 7 are connected by piping 9, and the opening-and-closing valve V3 is infixed in this piping 9. Furthermore, the piping 9 between this opening-and-closing valve V3 and the aforementioned pump 8 is connected to the medical fluid tank 12 through piping 11. The opening-and-closing valve V4 is infixed in this piping 11. The pump 13 which discharges the raw water in the immersing tub 3 outside is formed in the lower part of the aforementioned immersing tub 3.

[0013] In addition, it is good also as a thing equipped with the mass pump (abundant medical fluid means) which supplies a lot of medical fluids for the aforementioned pump 8, and the pump (little medical fluid means) of the few capacity which supplies a small amount of medical fluid.

[0014] Next, the operation of dipping former membrane filtration equipment 2, the membranous washing method, and the medical fluid washing method are explained.

[0015] First, the case where the dipping former membrane filtration equipment 2 of this example performs the usual filtration process is shown. That is, while changing the opening-and-closing valves V1 and V2 into an open state, the opening-and-closing valves V3 and V4 are made into a closed state. If the pump (not shown) connected to piping 5 and 6 in this state is operated, from a membranous outside, through a film, raw water will penetrate inside membranous and will be filtered. The permeate in the membranous inside will be stored by the treated-water tank 7.

[0016] Thus, if a filtration process passes a predetermined time (for example, filtration time is 30 - 60 minutes), a reverse washing process will be performed a predetermined time (for example, for 30 - 60 seconds) that membranous blinding should be canceled.

[0017] That is, the pump (not shown) by which ** was connected to piping 5 and 6 as if the aforementioned opening-and-closing valves V1 and V2 are maintained in the open state is made into a drive state, thereby, back wash water is fed in the membranous inside, flows out of the membranous inside towards an outside, and membranous blinding is canceled. although it usually comes of back wash water to use the treated water in said treated-water tank -- another back wash -- service water -- you may use the water from a tub

[0018] Since it becomes impossible to cancel membranous blinding if it filters with the aforementioned dipping former membrane filtration equipment 2 for a long period of time (for example, one month - several months) even if it reverse-washes, the medical fluid washing process using the medical fluid for washing is performed.

[0019] At this medical fluid washing process, first, a pump 13 is driven, the raw water in the immersing tub 3 is drained, and a membrane module 4 is exposed into the atmosphere. This drained raw water may make a raw water tank (not shown) flow back. In this state, while making the opening-and-closing valves V1 and V3 into a closed state, the opening-and-closing valves V2 and V4 are changed into an open state. In this state, if a pump 8 is driven, the medical fluid in the medical fluid tank 12 will be supplied in the membranous inside through piping 11 and 5, and will be stored temporarily. The stored medical fluid which was supplied during this reservoir will permeate the film exterior from the membranous inside, and will dissolve the suspended matter got blocked in the interior of a film.

[0020] under the present circumstances, when it shall have the mass pump (abundant medical fluid means) which supplies a lot of medical fluids for a pump 8, and the pump (little medical fluid means) of the few capacity which supplies a small amount of medical fluid. If the pump of small capacity is driven after stopping a mass pump, a medical fluid will be stuffed into the interior of the film of a membrane module 4, and a medical fluid will flow out of the membranous inside towards an outside through the interior of membranous. Under the present circumstances, the suspended matter which trespassed upon the interior of membranous is removed nearly completely.

[0021] Thus, the medical fluid which permeated the film collects on the pars basilaris ossis occipitalis of the immersing tub 3. By driving a pump 13, the medical fluid which is collected in the immersing tub 3 is stored in the waste fluid tank (not shown) formed separately.

[0022] Next, if a medical fluid washing process finishes, it will shift to the usual filtration process. However, putting into other tanks is good without putting the permeate in early stages of a filtration process into the treated-water tank 7 since it fills up with a medical fluid in the membranous inside, and a medical fluid mixes in a treated water in the initial stage of the usual filtration process and it is inconvenient in the case of a waterworks.

[0023] While making the opening-and-closing valve V4 into a closed state although it is made to perform the usual filtration process after being filled up with a medical fluid in a film, the treated water in a treated-water tank is supplied to the film inside, and you may make it drive out a medical fluid by the supplied treated water by driving a pump 8 by making the opening-and-closing valves V1, V2, and V3 into an open state. In this case, the medical fluid with which it is mixed in this way in the case of the waterworks is stored in the waste fluid tank (not shown) formed separately. On the other hand, you may pour with the sewage the medical fluid which was driven out in the case of the sewage as it is.

[0024] In addition, although, as for a medical fluid, a proper kind is used according to a membranous kind or the kind of blinding matter, a sodium-hydroxide solution, the solution of hydrochloric acid, the following sodium solution, etc. are used. Moreover, even if it uses one kind of medical fluid, you may make it use two or more kinds of medical fluids for two steps, dividing them.

[0025] Since according to the membranous medical fluid washing station and the membranous medical fluid washing method of this example the medical fluid for washing is poured to a raw water side on the aforementioned film and was washed from the treated-water side of this film on it after draining the raw water in the aforementioned immersing tub 3, if a proper medical fluid is used, membranous blinding can be washed nearly completely. And since a medical fluid is only filled up with and washed on the film installed in the state where it can be used, it is not necessary to remove a membrane module 4, and the halt period of dipping former membrane filtration equipment 2 can be made into the minimum.

[0026] Next, other examples of this invention are explained based on drawing 2. In addition, the same sign is attached and explained to the same component as the example of drawing 1.

[0027] The membrane module 4 is immersed in the raw water stored in the immersing tub 3 like the aforementioned example, and a move means (for example, crane equipment) which is not illustrated to make it go up and down a membrane module 4 is connected with this membrane module 4 at the medical fluid washing station of this example. Moreover, when raising a membrane module 4 above the immersing tub 3, the saucer 20 by which horizontal displacement is carried out is formed between the membrane module 4 and the upper limb of the immersing tub 3. It is prepared, in order that this saucer 20 may receive the medical fluid with which a membrane module 4 oozes, when medical fluid washing of the membrane module 4 is carried out.

[0028] And according to the medical fluid washing station of this example, from the state shown in drawing 2 (a), a move means is driven and a membrane module 4 is moved more nearly up than the oil level of the raw water in the immersing tub 3. Subsequently the horizontal displacement of the saucer 20 is carried out between a membrane module 4 and the immersing tub 3 (drawing 2 (b)). Then, it is filled up with a medical fluid like the aforementioned example in the film of a membrane module 4. Thereby, a medical fluid oozes out on the membranous outside through a film, and collects in a saucer 20 as waste fluid.

[0029] Next, as shown in drawing 2 (c), a treated water is sent out in a film and a medical fluid is extruded. Then, after carrying out the horizontal displacement of the saucer 20 and making it evacuate from the upper part of the immersing tub 3 as shown in drawing 2 (d), a membrane module 4 is dropped, it is immersed in the immersing tub 3, and the usual filtration process is performed. Thus, by forming a saucer 20, even if it all does not drain the raw water of an immersing tub, medical fluid washing can be performed. Therefore, the processing time of a medical fluid washing process can be shortened.

[0030] The example of further others of this invention is shown in drawing 3. The same sign is attached and explained to the same component as the example shown in drawing 1 and drawing 2.

[0031] That is, what is shown in drawing 3 forms a saucer 20 in the state where it is located in the height direction pars intermedia of the immersing tub 3 at a level with the state where it hung perpendicularly, free [rocking] focusing on the supporting-point section 21 inside the immersing tub 3.

[0032] A part of raw water in the immersing tub 3 is drained, and when the aforementioned saucer 20 is changed into the state where it was located horizontally, it is made exposed [a saucer 20] in this thing on an oil level. And a membrane module 4 is moved up, and you are the height more than the oil level of raw water, and make it located upwards for a while rather than the height which made the saucer 20 the level state. Subsequently, the supporting-point section 21 is made to rock as a center, and a saucer 20 is made into a level state.

[0033] Next, send in a medical fluid for a medical fluid in the film of a membrane module 4, a medical fluid is made to permeate outside from the membranous inside like the aforementioned example, and a film is washed. Since a saucer 20 is covered with the medical fluid which permeated the membranous outside, it sucks out of piping which prepared this in the saucer 20 with a pump 22.

[0034] In order to rock a saucer 20, you may make it roll round the wire 24 coordinated with the saucer 20 by the winch 23 fixed to the upper part of the immersing tub 3, as shown in drawing 4.

[0035] In addition, this invention may not be restricted to the above-mentioned example, and may be changed into a hollow fiber, for example, may use a flat film, a spiral film, a tubular film, etc. Moreover, a pump 8 may be one set of the pump into which a flow rate is changeable, and what combined the metering pump and flow control valve of a constant rate may be used.

Furthermore, it is also good to supply a medical fluid by one set of a pump, and you may make it circulate the medical fluid through a film.

[0036]

[Effect of the Invention] Since this invention was constituted as mentioned above, it has the following effects. The medical fluid for washing is supplied to a film by the medical fluid supply means from a membranous treated-water side, and a medical fluid permeates a film. A film will be washed by this. Under the present circumstances, since the film is exposed into the atmosphere or of raw water, compared with the case where a film is washed, a membranous cleaning effect can be heightened by the same method in the state where the film was immersed into raw water. Furthermore, in the thing equipped with the abundant medical fluid supply means and the little medical fluid supply means, after a medical fluid permeates a film, the medical fluid to supply is switched a little, and it passes and washes to a raw water side. A cleaning effect can be raised while being able to press down by this the medical fluid which flows into a raw water side a little. Since the time of removal / installation work becomes unnecessary the rate of movable of equipment improves. Furthermore, since the medical fluid for washing serves as only an amount supplied inside membranous, as compared with being immersed in a medical fluid washing tub and washing a film, a medical fluid is little, ends and is made in a low cost.

[Translation done.]

*NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

TECHNICAL FIELD

[Industrial Application] this invention relates to the dipping former membrane filtration equipment which filters raw water with the film immersed in the immersing tub, and relates to the membranous medical fluid washing method and membranous medical fluid washing station which wash the film in the immersing tub with a medical fluid.

[Translation done.]

*NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

PRIOR ART

[Description of the Prior Art] Conventionally, there is membrane filtration equipment of the dipping former which is immersed in a film (it is also called a membrane module) in the immersing tub in which raw water was stored, and purifies raw water in a filtration operation of a film. If fixed time use is carried out, it is made to wash a film in this membrane filtration equipment, since blinding will arise on a film by the suspended matter etc. and a filtration efficiency will fall, if membrane filtration is continued.

[0003] Reverse washing which a treated water is made to flow backwards to a raw water side, and washes it from a membranous treated-water side as this washing method is performed, or there are some which wash a membranous front face with the air bubbles from the air jet hole prepared under the film in an immersing tub.

[0004] Furthermore, if it is used during a fixed period, since a suspended matter etc. will enter to the interior of a film and the effect by the above-mentioned washing will fall remarkably, a film will be washed using the medical fluid for washing. In this case, you made it move towards the medical fluid washing tub in which the film was removed from equipment and the medical fluid for washing was stored, you made it immersed in this medical fluid washing tub, and membranous medical fluid washing was performed.

[Translation done.]

*-NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

EFFECT OF THE INVENTION

[Effect of the Invention] Since this invention was constituted as mentioned above, it has the following effects. The medical fluid for washing is supplied to a film by the medical fluid supply means from a membranous treated-water side, and a medical fluid permeates a film. A film will be washed by this. Under the present circumstances, since the film is exposed into the atmosphere or of raw water, compared with the case where a film is washed, a membranous cleaning effect can be heightened by the same method in the state where the film was immersed into raw water. Furthermore, in the thing equipped with the abundant medical fluid supply means and the little medical fluid supply means, after a medical fluid permeates a film, the medical fluid to supply is switched a little, and it passes and washes to a raw water side. A cleaning effect can be raised while being able to press down by this the medical fluid which flows into a raw water side a little. Since the time of removal / installation work becomes unnecessary the rate of movable of equipment improves. Furthermore, since the medical fluid for washing serves as only an amount supplied inside membranous, as compared with being immersed in a medical fluid washing tub and washing a film, a medical fluid is little, ends and is made in a low cost.

[Translation done.]

*-NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] However, there are the following troubles in the conventional medical fluid washing. Since remove a film from membrane filtration equipment, it is made to move towards a medical fluid washing tub and it is immersed in a medical fluid washing tub, the facility for movement of films, such as a crane, and removal and installation is needed. Moreover, since removal / installation work takes time, the rate of movable of membrane filtration equipment falls. Furthermore, since it is immersed in a medical fluid washing tub and a film is washed, the medical fluid for washing is needed for a large quantity and serves as cost quantity.

[0006] this invention is to offer the membranous medical fluid washing method and membranous medical fluid washing station which can wash with a small amount of medical fluid while it was made in view of the above-mentioned trouble and can shorten washing time.

[Translation done.]

*-NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

MEANS

[Means for Solving the Problem] this invention was constituted as follows in order to solve the above-mentioned technical problem. In the medical fluid washing method of the film immersed in the immersing tub in which raw water was stored, after draining the raw water in the aforementioned immersing tub and exposing the aforementioned film into the atmosphere, it is considered as the medical fluid washing method of the film which pours and washes the medical fluid for washing from the treated water side of this film to a raw water side on the aforementioned film. Moreover, in the medical fluid washing method of the film immersed in the immersing tub in which raw water was stored, a film may be moved upwards from the raw water in the aforementioned immersing tub, a film may be exposed into the atmosphere, and you may be the medical fluid washing method of the film which pours and washes the medical fluid for washing from the treated-water side of this film to a raw water side on the aforementioned film the back. In these washing, after making the medical fluid for washing permeate a film, the medical fluid to supply may be switched a little and you may pass to a raw water side.

[0008] Moreover, in the dipping former membrane filtration equipment which filters raw water with the film immersed in the immersing tub, a drainage means to have drained the raw water in this immersing tub to the aforementioned immersing tub, and to have exposed the aforementioned film into the atmosphere was established, and it is considered as the medical fluid washing station of the film characterized by having a medical fluid supply means to supply the medical fluid for washing to the aforementioned film from the treated-water side of this film. Moreover, it sets to the dipping former membrane filtration equipment which filters raw water with the film immersed in the immersing tub. A move means to move the aforementioned film from the raw water in the aforementioned immersing tub, and to expose this film into the atmosphere is established. Each aforementioned medical fluid supply means which may be the medical fluid washing station of the film characterized by equipping the aforementioned film with a medical fluid supply means to supply the medical fluid for washing from the treated-water side of this film. It is good to constitute from an abundant medical fluid supply means to supply a lot of medical fluids for washing, and a little medical fluid supply means to supply a small amount of medical fluid for washing.

[Translation done.]

*NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

OPERATION

[Function] According to this invention, it acts as follows. The medical fluid for washing is supplied to a film by the medical fluid supply means from a membranous treated-water side, and a medical fluid permeates a film. A film will be washed by this. Under the present circumstances, since the film is exposed into the atmosphere out of raw water, compared with the case where a film is washed, a membranous cleaning effect can be heightened by the same method in the state where the film was immersed into raw water. Furthermore, in the thing equipped with the abundant medical fluid supply means and the little medical fluid supply means, after a medical fluid permeates a film, the medical fluid to supply is switched a little, and it passes and washes to a raw water side. A cleaning effect can be raised while being able to press down by this the medical fluid which flows into a raw water side a little.

[Translation done.]

*NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

EXAMPLE

[Example] Hereafter, the example of this invention is explained based on a drawing. The dipping former membrane filtration equipment 2 with which the medical fluid washing station 1 of one example of this invention was attached to drawing 1 is shown. [0011] The aforementioned dipping former membrane filtration equipment 2 is equipped with the immersing tub 3 in which raw water is stored, and the membrane module 4 immersed into the raw water in this immersing tub 3, and outline composition is carried out. This membrane module 4 accumulates many hollow fibers (it is hereafter described as a film). The aforementioned film 4a has opened the inside of the inside for free passage at both ends while connecting both ends, respectively. Raw water penetrates this film inside membranous (treated-water side) from a membranous outside (raw water side), and it serves as a permeate (treated water).

[0012] Piping 5 and 6 is connected to the both ends of the aforementioned membrane module 4, respectively, the opening-and-closing valve V1 is infixed in one piping 6, and the opening-and-closing valve V2 is infixed in the piping 5 of another side. The treated-water tank 7 is connected to the aforementioned piping 6. The pump 8 is connected to the nose-of-cam side rather than the aforementioned opening-and-closing valve V2. Moreover, this pump 8 and the aforementioned treated-water tank 7 are connected by piping 9, and the opening-and-closing valve V3 is infixed in this piping 9. Furthermore, the piping 9 between this opening-and-closing valve V3 and the aforementioned pump 8 is connected to the medical fluid tank 12 through piping 11. The opening-and-closing valve V4 is infixed in this piping 11. The pump 13 which discharges the raw water in the immersing tub 3 outside is formed in the lower part of the aforementioned immersing tub 3.

[0013] In addition, the mass pump which supplies a lot of medical fluids for the aforementioned pump 8

[Translation done.]

*NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the outline block diagram of the dipping former membrane filtration equipment with which the medical fluid washing station of the film of one example of this invention was attached.

[Drawing 2] It is process drawing showing the medical fluid washing method using the dipping former membrane filtration equipment and this by which the medical fluid washing station of the film of other examples of this invention was attached.

[Drawing 3] It is the outline block diagram of the dipping former filter with which the medical fluid washing station of the film of the example of further others of this invention was attached.

[Drawing 4] It is drawing showing the outline composition of the dipping former filter with which the medical fluid washing station of the film of the example of further others of this invention was attached.

[Description of Notations]

1 Medical Fluid Washing Station

2 Dipping Former Membrane Filtration Equipment

3 Immersing Tub

4 Membrane Module

8 Pump

13 Pump

20 Saucer

[Translation done.]

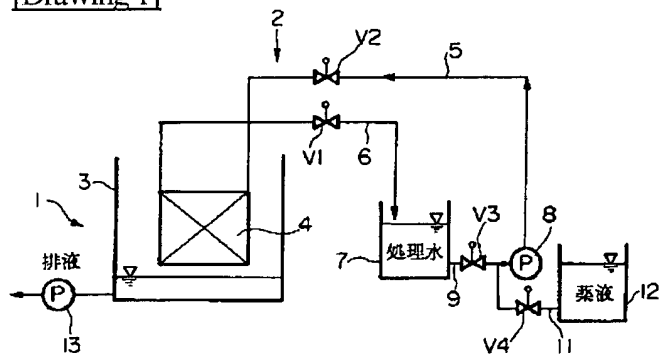
*NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

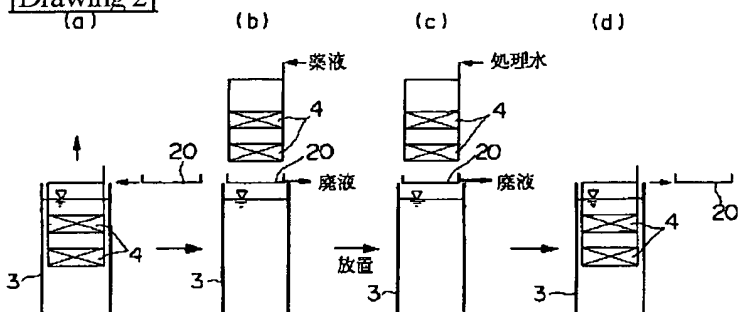
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DRAWINGS

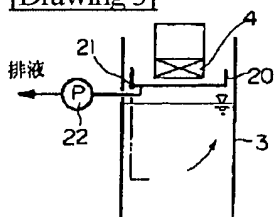
[Drawing 1]



[Drawing 2]



[Drawing 3]



[Drawing 4]

